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Effect of Intramuscular Administration of Dexamethasone on Labour Outcome in Induction of Primigravida at Late-Term Pregnancy

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ABSTRACT

Background: Induction of labour is common in clinical practice and is usually troublesome in primigravidas. Obestatricians are always in search of the best method of induction to ensure the best maternal and fetal outcome.

Objectives: to evaluate the effect of dexamethasone on labor outcome and to establish whether dexamethasone plays a role in shorting of the duration interval between initiation of labor induction and beginning of the active phase of labor in primigravida late-term pregnancy.

Patients and methods: Case control study included 120 primigravidae with late-term pregnancy classified into two groups: group I (cases) included 60 women assigned to receive a single 8-mg dose of dexamethasone intra-muscular and group II (control) included 60 women will not receive dexamethasone or any other cervical ripening agent.

Results: The interval between initiation of labor induction and beginning of active phase of labor was shorter in the dexamethasone group than in the control group (2.54 ± 0.94 hours vs. 3.59 ± 0.86 hours; p=0.001). Dexamethasone group showed shorter duration of active phase of labor than control group (4.82 ± 0.56 hrs. vs. 5.12 ± 0.58 hrs.). Dexamethasone group showed shorter duration of first stage of labor than control group (7.35 ± 1.15 hrs. vs. 8.69 ± 1.09 hrs.). Dexamethasone group showed faster rate of cervical dilatation than control group (1.37 ± 0.18 cm/hr. vs. 1.28 ± 0.17 cm/hr.). Dexamethasone group showed shorter duration of second stage of labor than control group (25.09 ± 12.99 minutes vs. 30.73 ± 12.96 minutes).

Conclusions: The administration of dexamethasone shortened labor duration with no significant difference between the two groups involving the duration of the third stage of labour, the neonatal outcome (meconium stained liquor, Apgar score at 1 minute and 5 minute birth weight, neonatal admission to neonatal intensive care unit and number of cases with fetal heart rate disturbance) and maternal complication.

Keywords: Dexamethasone, late-term pregnancy, induction of labor.

Introduction

Induction of labour refers to the process of artificially initiating uterine contractions prior to their spontaneous onset to affect progressive effacement and dilatation of the cervix and ultimately, delivery of the baby [(1)]**.** Induction of labour is one of the most common interventions practiced in modern obstetrics. In the developed world, the ability to induce labor has contributed to the reduction in maternal and perinatal morbidity and mortality [(2)]**.** The goal of labor induction is to stimulate uterine contractions before the spontaneous onset of labor, resulting in vaginal delivery. The benefits of labor induction must be weighed against the potential maternal and fetal risks associated with this procedure. When the benefits of expeditious delivery are greater than the risks of continuing the pregnancy, inducing labor can be justified as a therapeutic intervention [(3)]**.**

The American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine (SMFM) are discouraging use of the general label 'term pregnancy' and replacing it with a series of more specific labels: 'early-term,' 'full-term,' 'late-term,' and 'post-term.

The following represent the four new definitions of 'term' deliveries:

- Early-Term: Between $37^{0/7}$ weeks and $38^{6/7}$ weeks
- Full-Term: Between $39^{0/7}$ weeks and $40^{6/7}$ weeks
- Late-Term: Between $41^{0/7}$ weeks and $41^{6/7}$ weeks
- Post-Term: Between $42^{0/7}$ weeks and beyond [(4)]

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The success of induction and labor progression is depending on the condition of the cervix before initiation induction [3].

In Primigravidae, the mean time taken from induction to delivery is between 15 and 20 hours, of which up to 12 hours is spent in the cervical ripening phase before labor itself starts [5]. About 10 percent of pregnancies may be prolonged. In general, the longer the truly post-term fetus stays in the uterus, the greater the risk of a severely compromised fetus and newborn infant. Therefore of major importance in handling compromised postdate pregnancies is the use of a suitable method of labor induction [6]. A prolonged gestation is more likely to occur when the fetus has congenital adrenal hyperplasia caused by 2l-hydroxylase deficiency, which may be due to an impaired cortisol production [7].

The corticotrophin-releasing hormone (CRH), which has been identified in various organ systems, including the female reproductive system, is the principal regulator of the hypothalamic-pituitary-adrenal axis. Circulating placental CRH is responsible for the physiologic hypercortisolism of the latter half of pregnancy and plays a role in the onset of labor [8]. During pregnancy, large amounts of CRH are released from the placenta and fetal membranes. An increment in plasma CRH concentration occurs during spontaneous labor, with peak value at vaginal delivery [9]. Therefore, glucocorticoids also play an important role in human parturition. This cascade of events initiated by glucocorticoids may play an important role in the positive feed-forward mechanisms [9].

Aim of the work

To establish whether a single dose of dexamethasone (8mg) intra-muscularly plays a role in shortening of the duration interval between initiation of labor induction and beginning of the active phase in addition to shortening of the second and third stage of labor in primigravidae late and post-term pregnancy.

Patients and Methods

Technical design:

a) Site of the study: This interventional randomized controlled clinical trial was conducted at Zagazig University Hospital during the period from April 2017 to December 2017. **The study was approved by the Ethics Board of Zagazig University.**

b) Type of the study: interventional randomized controlled clinical trial.

c) Sample size: The calculated sample was 120 by assuming value. The participants were randomly assigned by computer list into group I (Dexamethasone group) N=60 and group II (Control group) N=60.

d) Target population: Primigravidae late and post-term pregnancy as follow:

Eligibility: Ages Eligible for Study: 18 Years to 35 Years old (Adult).

Inclusion Criteria:

- Singleton pregnancy.
- Primigravida.
- Late-term and post-term gestation i.e. 41w.and beyond according to ACOG.
- Reliable dates.
- Longitudinal lie.
- Cephalic presentation (Vertex).

Exclusion Criteria:

- Abnormal presentation.
- Multigravida.
- Multiple pregnancies.
- Active phase of labour.
- Cephalo-pelvic disproportion: Signs suggestive of an inadequate pelvis.
- History of any medical disorder.
- History of previous myomectomy operation.
- Known contraindication or hypersensitivity to dexamethasone.
- Current fetal distress.
- Significant vaginal bleeding.

Operational Design:

- **Methodology (plan):**

- It included 120 participants whom were admitted for labor induction at Zagazig University Hospital.
- The participants were randomly assigned by computer list into group I (Dexamethasone group) N=60 and group II (Control group) N=60.
- The participants of group I received a prefilled syringe with two milliliters (8mg) of dexamethasone intra-muscular, and the participants of group II did not receive dexamethasone or any other cervical ripening agent.
- No additional cervical ripening agent was used for induction of labor in either group e.g. misoprostol was not used neither orally nor vaginally.
- After six hours of the initial dose, the labor induction was started via

oxytocin using the following protocol:

- **a.** Initial dose of oxytocin..... 1 to 2 mIU/min.
- **b.** Increase interval ..... 30 minutes.
- **c.** Dosage increment..... 1 to 2 mIU.
- **d.** Usual dose for good labour... 8 to12 mIU/min.
- **e.** Maximum dose ….. 30 mIU/min.

- The number of cesarean deliveries in cases of failed induction in the 2 groups was recorded and assessed.
- After approval of Health Committee in Zagazig University Hospital, a verbal consent was obtained from each candidate after explanation of the procedure in detail.

Result:

Table (1): Bishop score at time of intervention

	Dexamethasone (No=60)	Control (No=60)	t-test	P-value	significance
Cervical dilatation	2.39 ± 0.72	2.52 ± 0.65	0.59	0.55*	**Ns**
Effacment	42.9 ± 6.9	43.9 ± 8.7	0.67	0.49*	**Ns**
Cervical effacement					
▪ firm	3(5.0)	5(8.3)			
▪ intermediate	20(33.3)	25(41.7)	x2=0.60	0.70**	**Ns**
▪ soft	37 (61.7)	30(50.0)			
Placental position					
▪ Posterior	6(10.0)	3(5.0)			
▪ Central	33(55.0)	30(50.0)	X2=0.41	0.91**	**Ns**
▪ Anterior	21(35.0)	27(45.0)			
Station of the head					
▪ -2	15(25.0)	12(20.0)			
▪ -1	6(10.0)	15(25.0)	X2=1.84	0.39**	**Ns**
▪ 0	33(55.0)	24(40.0)			
▪ 1	6(10.0)	6(10.0)			
Total bishop score	7.56 ± 0.73	7.61 ± 0.69	0.82	0.22*	**Ns**

Values are mean ± S.D. & number (%) *Student t-test S.D.: Standard Deviation; **Chi-square test; N.S.: Non-significant

There were non-significant statistical differences between the two groups as regard cervical dilatation, effacement, cervical position, consistency, head station and total Bishop Score.

Table (2): Statistical comparison between the two studied groups as regard the duration between induction and active phase

	Dexamethasone No=60	Control No=60	t-test	p-value	Significance
Duration between induction and active	2.49 ± 0.67	3.66 ± 0.77	8.88	0.001*	**Hs**

** p <0.05 ---- there was a statistical significant difference*

Dexamethasone group showed shorter duration between labour induction and active phase of labour than control group (2.49 ± 0.67 vs 3.66 ± 0.77 hr). There was a highly significant statistical difference between the two studied groups as regard duration between labour induction and active phase of labour (p=0.001).

Table (3): Statistical comparison between the two studied groups as regard duration of the active phase of labour (hours)

	Dexamethasone No=20	Control No=20	T- test	p-value	Significance.
Duration of active phase of labour	4.93 ± 0.69	5.30 ± 0.84	2.48	0.02*	**S**

Values are mean ± S.D. *Student t-test S.D.: Standard Deviation; S: Significant

Dexamethasone group showed shorter duration of active phase of labour than control group (4.93 ± 0.69 hours vs 5.30 ± 0.84 hours). There was a significant statistical difference between the two studied groups as regard the duration of active phase of labour (p =0.02).

Table (4): Duration of the first stage of labour

	Dexamethasone No=60	Control No=60	T- test	P-value	Significance
Duration of 1st stage of labour	7.22 ± 1.21	9.11 ± 1.9	1.43	0.01*	**S**

p >0.05 ---- there was a statistical significant difference

Values are mean ± SD *Student t-test S.D.: Standard Deviation; HS: highly Significant

Dexamethasone group showed shorter duration of first stage of labour than control group (7.22 ± 1.21hr vs 9.11 ± 1.9hr). There was a significant statistical difference between the two studied groups as regard the duration of first stage of labor (p =0.01).

Table (5): Shows the rate of cervical dilatation

	Dexamethasone No=60	Control No=60	T-test	*P-value*	Significance
Rate of cervical dilation	1.37 ± 0.20	1.17 ± 0.15	6.50	0.0001*	**Hs**

Values are mean ± S.D. *Student t-test S.D: Standard Deviation; HS: highly Significant

Dexamethasone group showed faster rate of cervical dilatation than control group (1.37 ± 0.20cm/hr vs 1.17 ± 0.15cm/hr). There was a highly significant statistical difference between the two studied groups as regard rate of cervical dilatation (p < 0.0001).

Table (6): Duration of 2nd stage of labour

	Dexamethasone No=60	Control No=60	T-test	P-value	Significance
Duration of 2nd phase	26.8 ± 8.7	30.3 ± 9.3	2.12	0.04*	**S**

Values are mean ± SD. *Student t-test S.D.: Standard Deviation; S: Significant

Dexamethasone group showed shorter duration of second stage of labor than control group (26.8 ± 8.7 minutes vs 30.3 ± 9.3 minutes). There was a significant statistical difference between the two studied groups as regards duration of second stage of labor (p =0.04).

Table (7): Duration of the 3rd stage of labour

	Dexamethasone No = 60	Control No=60	T test	P-value	Significance
Duration of the 3rd stage	8.57 ± 3.63	9.52 ± 2.99	25.8	0.155*	**N.S**

Values are mean ± SD & number Student t-test S.D.: Standard Deviation- N.S.: Non-significant

There was no significant statistical difference detected between the two studied groups as regard the duration of 3rd stage of labor.

Table (8): Mode of delivery among the studied cases and its indication

	Dexamethasone No=60	Control No=60	X2	p-value	significance
Type of labour					
➢ SVD	50(83.3)	46(76.7%)	0.54	0.43	**NS**
➢ CS	10(16.7)	14 (23.3)			
Indication of CS:					
➢ Field induction	2(20.0)	5(35.7%)			
➢ Failure to progress	3 (30.0)	4(21.4%)			
➢ Fetal distress	4(40.0)	5(35.7%)			
➢ Deep transverse arrest	1(10.0)	0 (0.0 %)			
Post-partum hge	1(1.7)	3(5.0)	X=0.26	0.61	**NS**

Values are numbers (percentage) **Chi-square test N.S.: Non-significant; SVD: Spontaneous vaginal delivery; C.S.: Caesarean section

There was a non-significant statistical difference between the studied Groups as regard the mode of delivery and complication like post-partum hemorrhage.

Table (9): Outcome among the studied cases

	Dexamethasone No=20	Control No=20	T test	p-value	Significance
BW (Kg)	3.2 ± 0.26	3.4 ± 0.29	0.30	2.29	**N.S.**
Apgar score1 min	7.22 ± 0.81	7.03 ± 0.53	1.5	0.30	**N.S.**
Apgar score 5min	8.81 ± 0.79	8.59 ± 0.65	1.33	0.42	**N.S.**
FHR disturbance	9(15.0)	6(10.0)	---	1.00	**N.S.**
Meconium stained liqour	3(5.0)	5(8.3)	X2 =0.13	0.71	**N.S.**
NICU admission	4 (6.7)	6(10.0)	X2= 0.10	0.74	**N.S.**

Values are mean ± SD & number (%) *Student t-test **Chi-square test
S.D.: Standard Deviation N.S.: Non-significant NICE: Neonatal intensive care unit

There were non-significant statistical difference between the two studied groups as regards birth weight, Apgar score at 1 minute, Apgar score at 5 minutes, fetal heart rate disturbance, meconium stained liquor & admission to NICU.

Discussion

The corticotrophin- releasing hormone (CRH) that had been recognized in many organ systems, as well as in the female's reproductive system, is the main controller of the hypothalamic-pituitary-adrenal axis. As pointed out through the study conducted by **Kalantaridou *et al*.** [10] that CRH, which is circulating through the placenta; is accountable for the physiologic hyper-cortisolism of the second half of pregnancy and plays a part in the onset of labour.

Our study pointed out that there were no significant statistical differences between the two assigned groups (Dexamethasone and Non Dexamethasone administrated groups) concerning the pulse, the mean maternal age (years), blood pressure (BP) and the gestational age (weeks) on admission. Also, there were no significant differences between the two randomly selected groups in this study as regarding to the primary Bishop score (cervical effacement, cervical dilatation, head station, cervical position and total Bishop Score). There were no significant statistical differences regarding the body mass index (BMI) and percentage of cesarean sections between the two groups. This study revealed that an intramuscularly injected dexamethasone injection had no significant difference between the two groups involving the duration of the third stage of labour and the neonatal outcome (meconium stained liquor, Apgar score at 1 minute and 5 minute, birth weight, neonatal admission to neonatal intensive care unit and number of cases with fetal heart rate disturbance). The first stage of labour was shorter in the dexamethasone group than the control group (7.22 ± 1.21hr vs 9.11 ± 1.9 hr.) (p =0.01). The second stage of labour was shorter in the dexamethasone group than in the control group (26.8 ± 8.7minutes vs 30.3 ± 9.3 minutes) (p=0.04). The interval between the initiation of labour induction and the beginning of the active phase of labour was 2.49 ± 0.67 hours in the dexamethasone group and 3.66 ± 0.77 hours in the control group, and the difference was highly significant (p-value equal 0.001). The duration of active phase of labour was 4.93 ± 0.69 hours in the dexamethasone group and 5.30 ± 0.84 hours in the control group, and the difference was significant (p value equal to 0.02). The rate of cervical dilatation was faster in the dexamethasone group than the control group (1.37 ± 0.20cm/hr vs 1.17 ± 0.15cm/hr) and the difference was highly significant (p less than 0.0001).

Our findings are in agreement with those observed by ***El-Refaie et al***. [11] who randomly assigned nulliparous women with a singleton fetus pregnant at ≥ 41 weeks' gestation undergoing labour induction with a modified Bishop score ≥ 7 to receive either a single dose of dexamethasone 8 mg intramuscular 6 hours before initiation of labour induction or 2 mL isotonic saline (placebo group). The interval between the initiation of labour induction and the beginning of the active phase of labour was 166.2 ± 30.3 minutes in the dexamethasone

group and 203.6 ± 27.8 minutes in the placebo group, and the difference was significant (P<0.001). None of the participants entered the active phase of labour before the initiation of the oxytocin infusion. Also, there was a significantly shorter duration of the active phase of labour in the dexamethasone group (318.4 ± 36.1 minutes) compared to the placebo group (330.9 ± 24.5 minutes) (P=0.028). There were no significant differences in the duration of the second and the third stages of labour or in the Apgar scores at 1 and 5 minutes.

Hassanin *et al.* [12], carried out a controlled trial on women (pG-para1-para2) with a full-term pregnancy and a Bishop score of 7 or greater, who were randomly assigned to receive a single 8 mg dose of dexamethasone or placebo 6 hours before initiation of labour induction. Dexamethasone group showed shorter duration of first stage of labour than the control group (7.35 ± 1.15 hr vs 8.69 ± 1.09 hr). There was a significant statistical difference between the two studied groups as regards the duration of the first stage of labour (p less than 0.001). Dexamethasone group showed shorter duration of the second stage of labour than the control group (25.09 ± 12.99 minutes vs 30.73 ± 12.96 minutes). There was no significant statistical difference detected between the two studied groups as regards the duration of the 3rd stage of labour. There were no significant statistical differences between the two studied groups as regards the birth weight, Apgar score at 1 minute, Apgar score at 5 minutes, fetal heart rate disturbance, meconium stained liquor and admission to NICU.

Fatemah *et al.* [13] performed a randomized, clinical, and double – blind trial, which was conducted on 172 primparous women , in or before the 40th week of pregnancy, and with Bishop scores (B.S.s) of 4 or lower divided into 86 women in the experimental group and the same number in the control group took part in the study. Bishop Score at entrance in cases was 2.95 ± 0.9 and in control group was 2.82 ± 0.9, which was not different significantly but this score difference in the first time of induction in cases group was 5.9 ± 1.57 and in control group was 4.6 ± 1.72 that was significant. In addition the interval between the start of induction and the beginning of the active phase in the cases and the control groups was significantly different (2.87 ± 1.57 vs 3.8 ± 1.72 hours) (P<0.001) but the interval between the start of the active stage and the beginning of the second stage of childbirth between the case and the control groups was not significantly different (3.47 ±1.1 vs 3.6 ± 0.99 hours) (P<0.3). There was no significant difference in the first and fifth minute Apgar score between the case and the control.

Kashanian *et al.* [14] examined the influence of dexamethasone injection on labour duration on 122 nulliparous women with a full term pregnancy and a Bishop Score ≥7, who were randomly chosen to be intramuscularly injected with 8 mg dexamethasone for the study group and placebo for the control group 6 hours before the beginning of labour induction. Her study showed that the interval among initiation of labour and the beginning of the active phase of labour was shorter in the dexamethasone-injected group than the placebo one (3.09 ± 1.5 hours vs 4.21 ± 1.8 hours; P=0.001). Also, the duration of the second stage of labour was shorter in the dexamethasone group compared to the placebo (22.23 ± 16.09 minutes vs 29.01 ± 15.32 minutes; P=0.014). No detected neonatal nor maternal complications.

Another study conducted by **Fouad *et al.* [15]** included 200 primigravidae with full-term pregnancy classified into two groups He found that the interval between initiation of labour induction and beginning of active phase of labour was shorter in the dexamethasone than in the control group (2.54 ± 0.94 hours vs 3.59 ± 0.86 hours; p=0.001). Dexamethasone group showed shorter duration of active phase of labour than control group (4.82 ± 0.56 hrs vs 5.12 ± 0.58 hrs). Dexamethasone group showed shorter duration of first stage of labour than the control group (7.35 ± 1.15 hrs vs 8.69 ± 1.09 hrs). Dexamethasone group showed shorter duration of second stage of labour than control group (25.09 ± 12.99 minutes vs 30.73 ± 12.96 minutes). Oxytocin duration requirement in dexamethasone group was less than in the control group (5.35 ± 1.49 hrs vs 5.97 ± 1.34 hrs).

Another study was conducted by **Hajivandi *et al.* [16]** including 100 nulliparous women with a gestation age of 40 to 42 weeks. There were no significant differences among the two groups in the aspects of demographic characteristics, Apgar score 1 minute and 5 minutes, initial Bishop Score, meconium difference and age. There was a significant difference among the two groups (p = 0.001) in the meantime interval between the induction and the onset of active phase in the two groups

(3.1 ± 0.68 vs 4.2 ± 1.3 hrs). Mean Bishop Score in the case group prior to intramuscular injection of dexamethasone was 2.33 ± 0.82 and after injection, it increased to 7.23 ± 1.23 and test revealed a significant difference between the two occasions (P<0.0001). Mean Bishop Score in the control group was 2.45 ± 0.77 before injection of normal saline and 2.98 ± 0.89 after the injection. Paired t-test showed a significant difference between the two occasions (P=0.01). Natural delivery was performed in 88.4% of the case group members, and in 67.4% of the control group members, and the difference between the two groups was significant (P=0.018). There were insignificant differences between the two group's infants in terms of the first and the fifth minute Apgar score.

A double-blind randomized clinical trial study was performed on 84 pregnant women at a gestational age of 40 weeks or more, and with a Bishop scores 5 with cephalic presentation, singleton pregnancy and intact membranes who had been admitted in the labour ward for the induction of labour. The women were randomly assigned into the two groups. In 41 cases, dexamethasone 20 mg extra-ovulary, plus extra-amniotic saline solution infusion (EASI) was prescribed, and 43 patients where EASI alone was prescribed. After 6 hours of these protocols, oxytocin was started. It was found that there were no statistically significant differences between the two groups according to age, parity, gravidity and primary Bishop Score. Of the 84 women, 75 entered the active phase of labour (38 [88.37%] in the EASI group and 37 [90.25%] in combined group) without a significant difference. The duration between oxytocin infusion until delivery were (7.25 ± 2.86 hrs and 9.76 ± 3.91 hrs) in the dexamethasone and EASI groups respectively, which showed a statistically significant difference (P = 0.002). There were no significant differences between the two groups according to cesarean section rate, meconium passage by fetus, neonatal Apgar score, birth weight, and need for the neonatal intensive care unit [17].

Ziaee *et al.* [18] carried out a study on women with a gestational age of 41 weeks and Bishop Score ≥7 who received 10 mg of IM injection of dexamethasone in two doses among a time interval of 12 hours and the second day, the induction was done through the use of oxytocin. During this study more women from the case (dexamethasone-injected) group entered the active phase than the control group. The interval among the induction and the active phase was shorter in the case group than the control one. The study concluded that dexamethasone injection before the labour induction decreased the duration between the induction and the active phase of labour.

In addition a newer study conducted to study the connection concerning success of labour induction, maternal endogenous DHEAS and Bishop Score in post term pregnancies. It was observed that DHEAS levels might have a significant impact on the efficiency of labour and the success of labour induction in post term pregnancies [18].

Al-Assadi *et al.* [19] study concluded that induction of labour utilizing extra amniotic foley's catheter and dexamethasone increased the ripening and decreased induction delivery time, which directs to the possibility that corticosteroids might have an impact in the parturition progression.

Another randomized study conducted on 44 women with a single pregnancy, intact membranes and an unfavorable cervix. This study was done to study the possible impacts of corticosteroids in the induction of labour through the extra-amniotic injection by an inflated intra-cervical Foley balloon catheter. The study case (n=22) were randomized to receive 20 mg of dexamethasone in saline solution while the control group (n=22) were injected with saline only administered with extra-amniotic injection through an intra-cervical inflated Foley balloon catheter. About 18 (81.8%) of the case group and 20 (90.9%) of the control group reached the active phase of labour and gave birth vaginally. The mean time intervals among the induction of labour to the active phase and among the induction of labour to giving birth were significantly shorter in the case study than in the control group (3.3 ± 2.1 hrs vs 9 ± 4.7 hrs, p <0.01 and 5.7 ± 3.4 hrs vs 6.9 ± 4.7 hrs, p <0.01, respectively) with no maternal or fetal complications. At the end the study, it was concluded that intra-cervical Foley balloon with extra-amniotic corticosteroids was more effective in decreasing the induction of delivery interval for termination of full term pregnancies than with the same Foley catheter with saline solution only. Using extra- amniotic corticosteroids for cervical ripening had the advantages of lack of systemic or major side effects, low cost and simplicity [20].

A randomized case- control study was conducted on 99 women, for induction of labour with a Bishop score of less than or equal to 5. The women were divided into 2 groups, 1st group consisted of 58 pregnant women, a 26 F catheter & and 20 mg of dexamethasone mixed with 20 ml of sterile saline solution infused extra amniotically. Second group consisted of 41 pregnant, with the same size catheter attached to 500 ml of saline solution infused into the extra-amniotic space. The mean time needed for expulsion of Foley catheter from start of ripening of cervix till establishment of active labour was shorter in the 1st group (150.36 ± 46.79) compared to 2nd group (223.83 ± 40.0), with P-value of < 0.001. The mean duration of 1st stage of labour was (184.53 ± 44.6 min.) in the 1st group which is shorter than in 2nd group (222.0 ± 47.62 min.) (P-value < 0.001). The duration of 2nd stage was also shorter in the 1st group (with mean of 33.25 ± 9.14 min.) compared to the 2nd group (with mean of 44.02 ± 7.0 min.). There was no significant difference regarding the mode of delivery between the two groups where 91.38% delivered vaginally versus 8.62% delivered by caesarean section in the 1st group. While 87.8% delivered vaginally versus 12.2% delivered by caesarean section in the 2nd group (P-value 0.737) [21].

Kavanegh *et al*. [22, 23] conducted a study to observe the impact of corticosteroids in cervical ripening and induction of labour. They concluded that more studies are required to know the efficacy of corticosteroids in induction of labour.

Conclusion:

Single intra-muscular injection of two ml (8mg) of dexamethasone before induction of labour appears to shorten labor duration.

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